1-19-54

Dear Bruce,

Here is a hsty reply to information requested in your (urgent) letter to Josh, received today, and also to some questions in your New Year's letter. 1)W-677(&relatives, 1177, 1817, 1876) carry a complex , supprficially called Gal 5 (lysogenicity paper, table 1) History: for purposes I needn't describe, a Gal- stock was allowed to papillate; later the Gal+ derivative was irradiated and a Gal - isolated, which actually was a slow-fermenter. Our estimate: so-called reversion probably a suppressor: W-677 therefore quite likely carries original and secondary Gal- mutations and differs further from wild stock by carrying a suppressor to the original mutation. At any rate if the progeny are adequately tested, 677 crossed to either Gal + or Gal- gives rise to at least 3 distinguishable phenotypes among the progeny.

I explicity did not use this stock in my Gal-Lp data (indidentally based on F+ x F+ crosses) and among others wrote to Appleyard at Caltech, and to Dawes, Sept. 1953 (at least, that's how I deciphered the signature of Rowley's colleague Clowes). You may have noticed that Wollman uses 1177 (677?) as the Gal + parent!

In our opinion, no reliance can be placed on Gal +/- segregations if W-677 is one parent in the cross under consideration.

2) In the same letter last Sept. I also told Clowes that W-945 and W-677 are independently derived after issuing from a common stock, W-1; thus they are identical only for: T-LpTh-Lac$_1$-Mal$_1$-.
W-945 is now known to carry Gal$_2$-. It is unrelated to 946 which is a prototrophic derivative of the type Gal$_2$- and shown to be allelic with the Gal- derived from 902 from which 945 was ultimately built up.

3) We are working with a series of closely linked but genetically separable cluster of Gal genes, showing linkage to the Lp$_1$ (sic) locus. Gal 1, Gal 2, and Gal 4 have been studied most intensively. When some aspects of this investigation are complete (soon, we hope optimistically) the symbol designations of the loci will be presented. Gal 1...4 were described in my thesis (see also allelic relationships paper) .
I don't know the status of Gal- mutants other than those produced at Wisconsin. Wollman's mutant is not necessarily Gal 4 .

4) Arab is a poor character, bss not very useful. No definitive information here on its linkage or genetic behavior.
5) We were interested in norleuc. R until discovering that the Gal involved was 677. Manten and Rowley claims re Val-TL linkage unconvincing; a proper test on threonine-supplemented and methionine-supplemented minimal T$^+$M$^-$ V^r xT$^-$M$^+$V^s and the reverse, then a study of distribution of Thr vs Val character in T$^-$ and T$^+$ recombinants etc etc constitutes a proper test.
6) Who said dead K-12 ? Micromanipulion of mating, distinguishable cell pairs yielding suspected zygotes now very successful. We're quietly accumulating details on post-zygotic elimination, mating process etd. Even Tom's kinetic experiments proving very ussful.

7) diploid lambda from lwoffates only. that from Gal$_2^-$Lp^s/Gal$_2^+$Lp$^+$ (cis), Gal$_2^+$Lp^s/Gal$_2^-$ Lp$^+$ (trans) and Gal$_2^-$Lp$^+$/Gal$_2^-$ Lp^s indistinguishable on Gal$_4^-$, Gal$_6$ - Gal$_1^-$ in effectiveness; latter 2 ineffective on Gal$_2^-$. Im phag from 2nd diploid gives rare transductions: (originate from Lp+ Gal+ haploid crossovers, perhps, because a.a. requirements and cultural conditions for best induction allow selection for some auxotrophic types. Work in progress don't quibte me yet too strictly on it.
8) Clive Spicer can recall to you the full flavor of our visit to Carbonda last Jan., and experiments there described. I think best approach is quie
[illegible] Selectionists and adaptationists never convince eaeh other.